Hints on Grape Culture.—X.

THE subject of *composts and manures* having been left unfinished in our last, we propose adding a few additional hints here. We have already given muck a very prominent place in the compost heap; its value can not be over-estimated. There are some soils, especially at the west, already sufficiently rich in this material; where this is the case, the muck may be omitted from the compost heap, though at a loss. We have been asked from the west, since our last, whether we would use muck in the compost heap when it is to be applied to a muck soil. We answer "yes" without the least hesitation. There seems to be a misapprehension here. Muck has a value as an improver of all soils not already rich in vegetable matter; it has another value as an absorbent of manures in the liquid and gaseous forms. It is in view of the latter value that we recommend its use in stalls and in the compost heap even when it is to be applied to a muck soil. We advise, therefore, that a heap of *dry* muck be always kept on hand, to be used in stalls, in the barn-yard, in the privy, in cess-pools, and other similar places. In muck soils, lime and ashes become important as occasional top dressings.

In our list of manures, it will be preceived that we have omitted to mention *Guano*. This has been done purposely. Our experience has led us to place a low value on it as a manure for the vine; the only case where its use is admissible is in a soil abounding largely in vegetable matter. The most that we can say of it is, that its use, under any circumstances, will only give us a present gain at a great ultimate loss. Our conviction is, that the use of guano should be entirely banished from the vineyard. Our objection to it, briefly stated, is, that it is too stimulating for our native vines, and produces disastrous results; it also rapidly dissolves the vegetable matter in the soil, and thus impairs that permanence which is essential to the continued health and fruitfulness of the vine. We may state, in this connection, that we have little faith in many of the artificial fertilizers as manures for the vine; some of them, when honestly made, produce good results; but too much caution can not be used in their purchase, to avoid paying twice their value. There is nothing, after all, like good old-fashioned barn-yard manure, properly protected and composted, not only for the vine, but for all cultivated plants.

Liquid manures may often be applied with advantage to the vineyard, but they are generally troublesome, unless special conveniences are provided for their application. Under this head may be included blood, urine, the contents of cess-pools, barn-yard drainage, etc., all of which should be considerably diluted before being used. Blood, however, we should prefer to put in the compost heap. Great

caution is necessary in the application of liquid manures; he who should attempt to use them in the vineyard as he does in the grapery, would find, too late, that he had committed a grave error. The best time to apply them is in the spring when the vine has made a growth of about three inches, or as soon as the young clusters can be seen, and in the early fall when the fruit is beginning to swell for the last time. Liquid manures must not only be diluted, but they must be applied sparingly, so as not to over-stimulate the vine. If the vine is growing well and carrying its fruit kindly, they should be withheld altogether: to apply them under such circumstances would not only be dangerous, but a needless waste of means. If, again, the vineyard has been top-dressed efficiently, no liquid manures will be needed during the same season. They will be most needed, and may be most frequently used, in light sandy soils; in very sandy or gravelly soils, it may even be desirable to use them two or three times during the season. It will always be best to use liquid manures, if possible, just before a rain; they should never be used during a drought, unless the vineyard is at the same time thoroughly irrigated.

After a vineyard becomes established, manures can only be applied in the form of top-dressings. Composts may be applied in the fall, when the vineyard is dressed, or early in the spring, as soon as the frost is out of the ground. Lime, ashes, bone dust, potash, and similar top-dressings, should only be applied in the early spring. We shall explain more fully the use of the top-dressings, etc., when we come to the annual treatment of the vine. When we state, in our last, that we banish the plow from the vineyard after the third or fourth year, we are not to be understood as banishing the important operation performed by that implement, but simply as intending to recommend another which we think performs the operation more perfectly, and without the same danger of destroying the primary roots, which often happens with the plow in careless hands. This will be fully understood when we come to the operation itself.

LANDSCAPE ADORNMENT.—NO. 18. "ARRANGEMENT."

BY GEO. E. WOODWARD,
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When one sets himself to work systematically to build a house, having in view the principles of convenience, economy, and proportion, his first step is to make or have made a plan embodying his ideas, over which he may study, cut down, increase, rearrange, etc., until his conceptions have taken a positive form, and are freed from all impracticabilities. This is business-like and profitable, and the result gratifying.

Whatever arguments are used in advocating the proper planning and study of house arrangement, (and there are many of great weight,) are equally applicable

to the proper arrangement of one's farm, country seat, or garden, that the whole management may be conducted with the most ease, and every thing be properly done and have its proper place. The full value or capacity of one's property can not be ascertained unless this be suitably carried out, for measurements and appearances are deceptive when viewed on the ground, and particularly so when all can not be embraced at once by the eye.

The arrangement of a country place, with a view to its convenience and economy of labor, and the best position of buildings and roads for artistic effect, is a matter of great importance, and deserves from all who contemplate the making of a new place, or the remodelling of an old one, a close and careful study, for on this depends success. Whatever change or improvement may be contemplated, the most intelligent, and at the same time the most economical manner of managing them is from a plan; and the first step should be to have a careful survey made of all boundary and division lines, and then of all topographical features, that a map or plan may be made, showing the exact size and shape of the property, and the position of every fence, building, road, stream, hill, etc., that may be on it. The survey of the land lines of property in the older states will not only satisfy the owner of the correctness of his purchase, but will, in seven cases out of ten, illustrate the fact that prominent errors exist which it should be his duty to have corrected without delay. There are some men foolish enough to buy real estate, and pay for it, without a resurvey, and do not discover blunders in description until years have elapsed, and original owners dead and gone. Errors of description may arise from many causes; the omission or repetition of a course and distance; the substitution of north for south, or east for west; including lines that have been cut off by other sales; and the copying of clerical errors that have run through and increased in twenty or more conveyances; the practice of deeding lands from surveys made by adjoining neighbors at intervals of generations; using lines made by different surveyors at widely different periods, all of which are referred without dates to the ever-changing magnetic meridian; having them compiled by some one not familiar with the peculiar phraseology of surveyors, and neglecting the different variations and attractions of the magnetic needle, etc.

He who buys a piece of land, no matter of what size, and neglects to have the same carefully re-surveyed, and a vellum map of the same attached to his deed, showing the length and bearing of all lines, the position of all land marks, and the names of adjoining owners, may find that he has purchased a good deal of anxiety and trouble. No surveyor is positively sure his work is right until he has checked it by plotting, yet innumerable conveyances are made without any plot whatever. We mention this fact because error is the rule and correctness the exception, and it is principally owing to the non-employment of competent parties to make surveys and conveyances. The money-saving faculties of some men tempt them to employ cheap assistance, and it is quite frequently the case that they convey more

acres than they sell, and oftentimes with the buyer, that he gets less than he bargained for. As an invariable rule, take no deed or word for measurements or quantities, but employ a surveyor of known ability to run out the lines, estimate the quantities, furnish the diagram, and see that you get all the land you bought. There should be just as much attention paid to this as to the examination of the title; for, although no mis-statement is intended, all are liable to be mistaken, and quite likely to be ignorant of the transactions of former owners.

We shall have a good deal to say hereafter of the wretched manner in which valuable estates are surveyed and conveyed; but to return to our subject. If you have been wise enough to have the boundary lines of your property resurveyed at the time of purchase, from this survey an outline map can be made. There will then be required a topographical survey of the interior, the result of which should be carefully drawn to a scale within the outline, and in the same position as on the ground. This topographical map then becomes a plan on which the quite important subject of arrangement must be worked out. Presuming that new buildings be required, and that no ornamental landscape effects have heretofore been attempted, we will commence by locating the house; this is most properly done on the ground, and then plotted in the same position on the map. The entrance, approach road, and lawn, are next important, and should be managed in the same manner; then the barn and other outbuildings, after which will come other roads and walks; then the flower garden, kitchen garden, horticultural buildings, orchard, pasture, grass lands, etc., all of which, by careful examination of the ground with map in hand, should be as conveniently placed as our present knowledge will admit. Having located all these leading accessories, which we shall class as useful or necessary, plot them all on the map in precisely the same position they occupy on the ground, and mark out the limits of vistas and views from the house and prominent points. Then comes the study, Is this combination harmonious? Is it the most useful and convenient? Can we not improve by changing the positions? Would not the barn be quite as accessible and little less prominent if placed differently? Would not the kitchen garden, which we go to several times a day, be better if placed where the orchard is, to which we go seldom? How shall we plant to shut out disagreeable features, work up our vistas, display our fine ornamental trees, etc.? All of which can be readily and thoroughly studied, and then marked out on the ground to be executed, in precisely the same manner as we study out on paper the combination of parlor, dining-room, reception-room, library, hall, etc., giving each its relative importance and convenience, and the command of certain views, the perfect realization of which is well understood.

But, says one, surveys and plans for landscape improvements are somewhat expensive. Then how much more so is landscape improvement blindly managed. A few dollars or a few strokes of the pencil will correct a plan, while a few hundred dollars will be required to correct a botch in real materials; or a

few hundred dollars, wisely and understandingly expended, will produce more art, beauty, and pleasure than as many thousands laid out without system. And herein lies the disappointment in landscape embellishment. It is precisely the same disappointment that follows the progress of any pursuit, unless one qualifies himself to undertake it.

CACTÆ.

BY FREDERIC PALMER, OF NEW YORK.

Mr. Editor:—Will you allow an old subscriber, a true lover of Cactæ, and not an unsuccessful cultivator of these plants, a corner in your valuable columns, for a few remarks called forth by an article on "Cactæ" in your number of September?

The writer of that article says, that "Cactæ have no distinct difference of petal, wood, bark, or leaf; that they have *no* leaves, the entire substance of the plant being a mass of matter, which may be called a branch, or frond, but *never* a leaf." Now, although in many instances these plants are not as perfectly constituted, with regard to wood, bark, and leaf, as an *oak* or an *elm*, yet very many of them *have* leaves just as apparent and just as perfect in every respect as either of these trees. Take one whole section of the "Pereskiæ," for instance—those with flat leaves, such as P. aculeata, P. Bleo, P. grandiflora, P. zinniæflora, etc., etc., in what do their leaves differ from those of a "camellia" or a "laurel?" They have, moreover, both perfect wood and bark, and so have many "Opuntiæ," which is most conspicuous in O. Braziliense, and in all the tribe when old.

Another section of "Pereskiæ," and most "Opuntiæ," have deciduous leaves, "cylindrical" to be sure, but so are also those of Grevillia, Sedum, Mesembryanthemum, and many other plants. Besides, in a botanical sense, the shape of the leaf is of no consequence; it is an organ in which the sap is elaborated through that organ's surface, by contact with the air, as necessary to the life of the plant as lungs to an animal, and therefore must exist in some shape or another, or the plant can not live.

The subject has not been very much studied, but it is supposed by many botanists, among others by Labouret, (who has written a very excellent hand-book of Cactæ), that the "tuberculæ," or "mammæ," play the part of leaves in such of these plants as lack them in a more conspicuous shape. With regard to "petals," I must own I never saw a Cactus flower without them, and they appear to me to have as "distinct a difference" from the other parts of the plant as the petal of a rose, a "petunia," or a "mesembryanthemum." The fact that a frond, or "piece of a frond," will readily root and form a perfect plant, is by no mean peculiar to "Cactæ," or even to succulents in general; your readers need not be told what a

vast number of plants are usually propagated in this way. The common "scarlet Geranium," for instance, will readily root a piece of young green shoot, let it be taken from the "side" or any where else, so that it have at least *one eye* above ground; and so must the piece of Cactus, or it will not grow; in both these cases you have a piece of succulent matter which differs in no respect, and *an eye* containing the embryo plant. The Geranium will also strike upside-downward, but in this case, as also in that of the Cactus, the growth is retarded.

I agree with the writer that Cactæ require, more than any other plants, a season of rest; but I should be sorry to subject any valuable specimens to a "total abstinence from water for twelve months, even at a temperature of 80° Fahr." The fact is, that most of these plants show a tendency to vegetate towards spring, sooner or later, according to the mildness of the weather without, and this tendency must be fostered by artificial heat and consequent judicious watering and ventilation, or *all pushing flower-buds will turn to wood, i. e.*, branches or fronds, in Opuntiæ and Cerei, offsets in most Echinopsi, Echinocacti, and Mammillaria.*

The cultivation of Cactæ in collections has very much increased of late throughout the Continent and in Great Britain.

In Paris, the kinds which bloom so easily, and are so readily propagated, as C. speciosissimus and its hybrids, Echinopsis Eyrisii and others, Echinocactus Ottonis, and sundry Phyllocacti and Epiphylli, may be had in the flower-markets for from 5 to 25 sous each.

Many kinds are expensive. Echinocactus Californicus never sells under $4 to $5, as a mere offset, $20 when rooted, and a couple of inches in diameter; E. C. Texensis, $5 to $15; Cerei, from 25 cents to $25. Of C. Uncinatus there are only four or five specimens in Europe; they sold, without roots, at $20 each this summer. Young Leuchtembergiæ and Anhalonium bring $4 each, when they are to be had at all. Of Pelecyphora there is but one specimen in Paris, purchased at $25, and one or two at Ghent. Of the different Discocacti, not one single specimen exists in Europe. Melocacti do not do well in France, when imported as adults, with their "cephalium" ready formed; they have hitherto died off; there are plenty of European seedlings, however, in the trade, which may prove more hardy, but as yet they are very young, and have many winters' trial to undergo before they show their "cephalium," and are fit to take their place as specimens of flowering plants. On the subject of Melocacti, I can not conceive how the writer above alluded to can have managed to "hybridize" these plants. The flowers are so minute, so hidden under the wool and spines of the "cephalium," that it seems to me next to impossible to impregnate them artificially. If there is no mistake, his seedlings will be welcome in European collections, where, I

* For further particulars on the subject of cultivation, see divers articles of the writer's, signed with the pseudo-name A. B. C., in the *Horticultural Cabinet*, London, and *Horticulteur Français*, Paris.

have no doubt, they would meet with a ready sale. I, for one, would be glad to purchase a few of them.

I may add, in a general way, that an amateur on the Continent will be able to form a collection of

100	distinct	kinds	for	an	average	of	- -	15	sous each.
200	"	"	"		- - -		3	francs	"
300	"	"	"		- - -		5	"	"
400	"	"	"		- - -		10	"	"
500	"	"	"		- - -		10	"	"
600	"	"	"		- - -		10	"	"

The last will include all the tribes, genera, and species known and described, but of course a vast number of mere varieties and hybrids, and can not be got together without a good deal of trouble. At this figure most rare kinds will only be young specimens, as *some* of these (as large plants) will fetch 1,000 francs each. The finest collection is that of the late Prince de Salm Dyck, near Bonn, on the Rhine.

There are many dealers exclusively devoted to the propagation and sale of "succulents" in every capital on the Continent, and one or two in London. They all seem to drive a thriving business. Agaveas and Yuccas are at present much in vogue; rare kinds of the former bring very high prices. Verschaffelt, of Ghent, exhibited in Paris, at the last show of the Imperial Society, a few days since, two new kinds, A. Verschaffeltii and another not yet named, offsets of which he quotes at 100 francs each. I lately saw, at a dealer's in Havre some splendid specimens of Yucca aloefolia variegata, for which he gets about 300 francs each; Y. quadricolor of same size would bring at least 1,000 francs.

Versailles, France, 26th Sept., 1861.

[A valuable and interesting contribution, for which we desire to return Mr. Palmer our best thanks. Mr. Barker, to whose article he refers, will no doubt respond.—Ed.]

ON PROTECTING NATIVE GRAPES IN WINTER.

BY PRATIQUER.

It is our duty to profit by experience. The results of the past year have taught a lesson to be improved by vineyardists, as a matter of pleasure as well as profit. Among those who laid down their Grape-vines in the fall of 1860, are now, at the fruit-ripening season, to be seen many cheerful countenances, the owners pointing with glowing satisfaction to well-loaded vines, bearing ripe, delicious Grapes, produced, as they firmly believe, by their discretion in protecting the

vines a year ago, some of whom, I am happy to say, have realized a money value for their products which enables them to say that Grape-culture is profitable as well as pleasurable. The protection of vines in this Northern climate is a necessity; they may escape five years out of six, and yet, if the crop is lost once in that time, the grower not only loses his crop, but very often loses his confidence, so that he neglects to prune, cultivate, and train, and perhaps, through carelessness and neglect, loses his crop of future years, and ultimately the cost of his vineyard. I do not here allude to those who neglect to take the HORTICULTURIST, and thus lose, through *ignorance*, both crops and investment, though there are many such within the writer's knowledge. When one sees a neglected vineyard, and inquires the reason why it is not cared for, he is often told, "It won't pay." Why not? "Because it is so much trouble to cover the vines in winter." Let us look at this, and see if it is so. The writer, who is an enthusiast on Grape-culture, desirous to try experiments, lost many of his vines by a neglect to cover them, or by leaving them tied to the stakes and trellis, to see what would happen to them, while the other portion, covered with earth, or laid on the ground and covered with leaves and snow, were not only in good order in the spring, but have borne abundantly of good ripe fruit, and have already ripened wood for another season, ripening both fruit and wood many days earlier for their protection. A neighbor, with a large vineyard, producing annually many tons of Grapes, covered a part of his vines, which have yielded bountiful crops this season; he has lost, by his estimate, from two to three thousand dollars on those left exposed, the expense of covering which would have amounted to a trifle less than two hundred dollars. Omitting this small expenditure, his unprotected vines have barely paid the expense of cultivating the past summer; indeed, a part of his vineyard has not even been plowed this season, showing that he was discouraged. I could cite many more instances, if necessary, but a word to the wise is sufficient. It must be remarked, that the winter of 1860–'61 was the severest upon many fruits that has been experienced during the present century, either on this continent or in Europe. The cold was intense for perhaps twenty-four hours at a time, and was preceded and followed by moderate weather, with a clear winter sun. There is good reason to believe that native Grapes would bear the severest cold if they were not suddenly exposed to a bright sunshine, after being congealed into solid ice; it may not, therefore, be necessary to bury them *in* the ground, but it is undoubtedly the most economical mode of protecting them, is found to be effectual in every instance heard of, and is doubtless attended with less trouble than any other method of covering and protecting known. It can be done rapidly; with an hour's practice, a man becomes very expert. First, let the vines be pruned and trimmed ready for tying in the spring; then run a plow two or three times between the rows, near the middle, say about three or four feet from the stakes or trellis, and so far from the vines as to lay no roots bare; then let two men work together, one of whom gathers the canes, and holding them together, lays them

on the ground lengthwise of the rows, while the other throws two or three shovelfuls of earth to anchor them, and continues to throw on more earth, where needed, until the first is ready with more canes from the next vine. They proceed thus through the row. Returning, they each use the shovel to complete the covering. It may all be done in less time than the two men would dig a row of potatoes. This is much easier and less expensive than covering with straw; besides, straw beds become harboring-places for mice, which often damage the canes when short of food. Another method is to construct hurdles to lay over the vines, but it is both troublesome and costly, except on a small scale. Vines are sometimes well protected by laying on the ground, with stones upon them, to prevent swaying about in the wind. There are some hardy varieties which have withstood the vicissitudes of our climate, and which may be said not to need any protection; but they may live in one location, and be winter-killed in another; or, under varying circumstances, the wood of one may be more perfectly ripened, and thus be able to stand severer tests. *It is better to cover them all;* they are then sure to come out all right, and will bear their fruit three to five days earlier for it, which is an item of great importance, adding more value to the crop than all the labor and expense of protection. In the spring, the canes may be lifted with a garden fork, and allowed to lie on the ground until the proper time for tying to the stake or trellis.

[The trouble of covering vines is no doubt greatly overestimated; the advantages are well stated by Pratiquer. A friend on the Hudson, who has a vineyard of several acres, has for ten years or more covered the whole of it. We purpose by and by, to examine the advantages and disadvantages of the plan, and give an approximation of the cost per acre.—Ed.]

CULTURE OF CELERY.

BY JOHN EGAN, NEW BRIGHTON, S. I.

For an early crop, the seed should be sown in a cold frame the latter part of March; and when the plants have attained an inch in height, they should be thinned a few inches almost every way. Plants from the sowing will be fit to put out in the trenches at the beginning of June, which is early enough for this climate. To have plants fit any earlier, they would require to be raised in a hot-bed, and be very liable to run to seed, or become piped. Transplanting often will not remedy the matter, though it is the opinion of many that it will; but I have never observed any material difference in the success of the two treatments. The trenches should be opened early in June, 12 inches deep, 16 inches wide, and four feet apart, and be nearly filled with rotten cow manure, if obtain-

able; if not, any well decomposed manure will answer. It should be thoroughly incorporated with the soil, and the whole left level with the earth. This will be found to work much better than sunken rows, which always become more or less filled with the wash of the soil during heavy rains, thus injuring the plants, besides causing loss of time in its removal, neglect of which will destroy the whole crop. If the weather is dry at the planting time, holes should be made with a dibble, seven inches apart, to receive the plants, and filled with water until they retain it somewhat; but pour none on the surface, either before or after planting, as the action of the sun on the saturated surface would harden it, rendering them impervious to air, besides reflecting a powerful heat, and burning up the plants.

The best time to put out the plants is in the evening, and if they are taken up with roots and leaves entire, and planted immediately, success is certain. Many persons cut off nearly half the roots and leaves, and particularly the tap root, which I prefer to remain on, as in case of extreme drought it will find nutriment sufficient to keep the plant in a growing state. Market Gardeners are aware of this, and transplant but once and finally, preserving the roots uninjured; they thus raise good stocky plants, which are strong enough to sustain themselves, and have a neat appearance without clipping root or leaf. As soon as the plants begin to grow, stir the earth slightly around them and keep them free of weeds, but put no earth to them until they have grown twelve or fourteen inches high, and but little then. Many persons injure their Celery by earthing it too soon, and before the plants are strong enough to withstand the partial deprivation of air and light, as well as the considerable compression to which it is subjected during the process of blanching. Crops designed for winter consumption are frequently treated in this manner, the result being high banks of earth, lean Celery, and a small supply when plenty is expected.

The handing of Celery follows next, and is also an important part of its culture, which, if neglected, may lose the crop. It consists in carefully lifting up the lower leaves of the plant, and compressing lightly the lower part of the plant, with the hands, then banking sufficient earth against the base to keep the stalks so close and erect that the earth cannot get into the hearts and cause decay. Some gardeners may smile at my dwelling on so simple a matter, but this article is intended for those amateur growers who do not know these things.

Handing being done, the earth can be laid against the sides with the spade. As the growth progresses, a second course of handing will generally be sufficient, but earthing will be required oftener.

For winter and spring keeping, Celery requires a different mode of treatment, as it will be necessary to grow the plants in the seedling bed in the open ground, so that they may not become over large at the proper time for planting, which will be from the first of July to August; those planted in August being required for spring use. If the seed be sown about the first of April, in drills of a foot

apart, and, when an inch in height, thinned to three inches apart, nice stocky plants will be produced by July, when trenches may be prepared as described above, with the exception of leaving them five feet apart, and selecting the strongest plants for this, the main crop. Otherwise treat them in the same way as already described. About the first of August the remaining plants should be set out in trenches, same as above, except that, as these will not be blanched in the trenches, no earth whatever should be put to the stalks, and they should remain until the proper time for taking them up and protecting them for the winter.

In regard to keeping Celery, there are many ways in vogue, none of which I consider superior to the means I use, and which has been practiced these twenty years past. It is to lay the plants almost perpendicularly against a ridge, each head touching the other, and putting a layer of three inches of earth between each layer of Celery, leaving about four inches of the tops exposed to the light and air until severe frosts come, when the whole should be covered with litter, and a temporary covering of boards made to throw off the rain. A shallow trench should be formed around it to carry off moisture. The Celery to be protected should be taken up and put away on a dry day, and the ridge situated in a dry place.

Celery can also be grown very well by sowing the seed in the row or trench, and without transplanting. In regard to varieties, I consider the white solid a good, reliable kind to grow. Red Celery is hardier, and will stand the heat better, but is of coarse quality. The Celery planted in August will be found well blanched, and in good order late in the spring, when it is generally very scarce.

THE VERBENA.—NO. III.

BY A. VEITCH, NEW HAVEN, CONN.

The impression seems to be gaining ground that the growers of Verbenas do not sufficiently realize the importance of selecting the best varieties only in making up their stock, and that dealers do not act wisely in letting out seedlings which are inferior to older sorts. Not that every thing new ought to be discarded which does not come near to the standard of excellence, but such of those as are retained should be possessed of some property in a more eminent degree than is to be found in any of those which are superior in every other respect. And if such a plea can not be urged in their behalf, it would be better to let them remain in obscurity than to have them named and paraded in catalogues, and introduced into gardens, as disappointment, and, it may be, "want of confidence" in the parties who so act would be likely to follow. Were all concerned a little more careful in such matters, no one can doubt that more rapid advances

would be made than has hitherto been done, and infinitely less of disappointment experienced by those who put their trust in every thing new that comes well recommended. In bringing about such a state of things as the friends of Floriculture would wish, it is necessary that the properties of flowers be well understood, and that each and every one act upon the rule not to recommend any seedling unless it is as good, and as distinct from, all the other sorts with which he may be acquainted.

And here it may be as well to dispose of an objection that has sometimes been urged against any important reforms being carried out in Floriculture. It has been set forth, as an excuse, that the public do not give sufficient encouragement to make any greater pains-taking prudent, as the experiment might not pay. It may be true that a considerable portion of what is called the public manifest the greatest indifference as to whether flowers are improved by care and cultivation, or not. So they may be with other things that do not directly administer to their own selfish interests; with sculpture, painting, poetry, and, in short, with every thing that exalts and ennobles man. But there is another portion of the great public, and perhaps by far the greatest, of whom this can not be said; and it is with those that florists have the most to do. They are gifted with a warm love for all that is beautiful in nature and in art. They may not be all rich and great, yet still they are illustrious, wearing, as they do, the badges of nature's true nobility. As a natural and necessary consequence, they love flowers, and many cherish them as an "exceeding great reward." It is to them the florist must look for encouragement and support, and in their behalf—"I will say it"—he will not look in vain, while laboring for their gratification in the production of new and still more beautiful forms than any they may have yet seen. He who does not strive to be the leader of this class must stoop to the ignoble condition of being led by them—an alternative no one will choose, but such as are destitute of all those qualities which alone can make him great and respected in his profession, and entitle him to the high honor of being a "fellow-worker with the Creator."

Regarding the properties of the Verbena, these, we think, have by no one been better stated than by Glenny, founded as his undoubtedly are on principle, and which, if combined in all their round fullness in one individual, would make that individual an object of the greatest attraction. While frankly making this admission, we at the same think an addition might be made which would render them all the more perfect as a standard by which to measure the various candidates for public favor. At the time they were published, flowers with distinct colored eyes were not common, if in existence at all, and for this reason such a feature must have either been overlooked or not anticipated. Now, however, since these are common and deservedly popular, it becomes a question for florists to settle, what form of eye would be the most acceptable, and in harmony with the principles of æsthetics? So far as I am capable of judging the points which constitute

a good eye, I venture to say it: *The eye should not be less than three-sixteenths of an inch in diameter, forming a circle, having the tube for its centre. Of whatever color, clear and distinct, and not running into nor shaded with the ground-color of flower.* It will, we think, appear evident this form is greatly to be preferred to any other; and although flowers with square eyes are common, they should not be sought to be perpetuated in raising seedlings.

Let us look for a moment at some of the varieties in this class, and see what prospects there are for these requirements being met. Ocean Pearl is good as regards size and color, but is badly formed; and the eye, although clear and distinct, is so perfectly square, that, perhaps, it had better been blind. Garibaldi is another we can not help admiring, with all its faults. The eye is not distinct; flowers very large, badly arranged; color, pale claret, deeper shaded; fades soon. A magnificent variety, as regards size and color, for green-house culture. Lady Palmerston was among the first really good in this way. She holds a place still, but is only an approximation to what may yet be expected in this strain. Day Star is a beautiful variety; color, brownish-crimson; eye, clear white, surrounded with a band of deeper shade than ground-color, which makes the contrast all the more striking; too small; otherwise, perhaps the best dark Verbena yet raised. In no instance that I am acquainted with, however, has the standard been nearer touched than by a seedling raised the present season in New Haven, called Day-spring. Color, indigo-purple, beautiful shade, and in striking contrast with the clearest white, and most perfectly-formed eye I have yet seen. The flowers are well formed, and flat, thus forming a most beautiful truss. Let any one compare this variety with such as Edith and Ocean Pearl, and he will readily perceive the form we contend for is greatly to be preferred to any other. And we believe, at no distant day, florists will no more think of recommending Verbenas with square eyes, or with eyes half formed, than they would a Polyanthus or an Auricula in that way.

It is only necessary to mention the names of a few of those in the other section, which we believe comes the nearest to perfection, and which are general favorites, viz., Magnet, Crimson Perfection, Baron Renfrew, and Mrs. C. W. Field. Others might be given, but it is unnecessary, as these are sufficient, and may serve as an example how entirely the published properties and public taste coincide. Were it otherwise, the properties might not be wrong, as public taste is shifting and capricious; principles change not.

Closely related to this subject are the rules to be observed in judging the Verbena, as well as other flowers, at Horticultural Exhibitions. And here it may be observed, this is sometimes gone about in an easy, slipshod way, without due regard to the properties of the flowers, or the rewarding of merit. One cause of this is owing to the fact, that men are sometimes called upon to act as judges who have not bestowed sufficient attention upon the subject to enable them to see such things through the same medium as the true and edu-

cated florist. Their taste may be as good, and their appreciation of the beautiful of the highest order, yet withal they may be lacking in that which is necessary to the creditable performance of this duty. And then, too, they are generally left to choose their own standards of excellence, and give their decisions without any preconception of the points most esteemed by those who know the most of the elements which constitute a perfect flower, whether singly or combined.

Were societies to agree upon the properties of flowers, and publish them for the benefit of all, and at the same time lay it down as a rule for the judges at their exhibitions to be guided in their decisions by these, the cause of much dissatisfaction would be avoided, and a better understanding of the whole subject speedily come to. Then florists would have a greater inducement than they have now to grow nothing, and recommend no more, than what they know to be really good; and judges would have something tangible to refer to and rest upon in the work of adjudication.

There is a way of judging the Verbena which, although not new to the profession, may be possessed of sufficient interest to warrant its being noticed here. It is simply that the judges agree, first, how many points or properties to count in a perfect flower. Suppose the question to be settled is, Which of three stands of Verbenas, of 12 trusses each, is the best? Referring to the properties, as given in the March number of the HORTICULTURIST, and the addition to these we have proposed, the six following points are deducible, viz., form, size, color, substance; form, size, and color, of eye; form and size of truss. The eye and the truss, counting one each, when perfect; otherwise, three-quarters, one-half, or one-quarter, as the case may be; and so with all the other points. This being understood, each flower is tried singly upon its merits, and set down at what it is worth, somewhat in the following way:

Stand No. 1.		*Stand No.* 2.		*Stand No.* 3.	
FLOWERS.	POINTS.	FLOWERS.	POINTS.	FLOWERS.	POINTS.
1	3½	1	2¼	1	3
2	4	2	3	2	4
3	2¼	3	4	3	5
4	1	4	5	4	2¾
5	3	5	2	5	3
6	2½	6	3½	6	2
7	4	7	2	7	4
8	2	8	3	8	3½
9	3¾	9	4	9	2
10	4	10	2¼	10	5
11	1	11	1¾	11	3¼
12	3	12	3	12	4
	34		35¾		41½

Thus, it will be seen stand No. 3, having the greatest number of counts, would be the first, No. 2 the second. In many cases there would be no need for having recourse to this method, as, when the competition is not close, judgment could be pronounced at a glance. But in spirited competition, with a number of stands all seemingly alike good, by this way the judges can perform their part, so as to make any well-grounded objections to their decisions almost impossible.

A wonderful improvement has been wrought upon the Verbena during the last twenty years, and there is a broad margin still left upon which to note improvements as great as any that have yet been effected. It is not a long time since the original species, and these few in number, comprised the entire stock of the florist; now varieties can be had to suit almost every taste. It is true, with such as Melindres and Tweediana, he had what he did not "willingly let die," but some of the descendants of these, and others, have been so much improved under his surveillance, that he may well gather encouragement from the past to sustain him in the future, while prosecuting the delightful task of carrying them forward to still higher points of development. And, he may depend upon it, the straightest road to perfection is, to have no dealings with any but the best in raising seedlings.

[You have handled the Verbena so well, Mr. Veitch, that we suggest you take up some other flower in the same way. There is much to be said. We would add a few comments if the article were not already so long.—Ed.]

FRUIT TREES IN POTS.

[FROM THE GERMAN OF DR. DIEL.]

Some time since we saw at Mr. Erhard's an old German work on the Cultivation of Fruit Trees in Pots, by Dr. A. F. A. Diel, published in 1798. There was so much simplicity, freshness, and breadth of view in it, that we determined to give our readers some extracts from it, and now present the first. At this time, when pot culture is exciting so much attention, it will be read with interest. The work has a historical value too, as giving us an insight into the origin of this particular mode of culture, which many regard as quite new, though it really dates back beyond Diel, who, however, seems to have been the first to practice it in a systematic way. Diel is regarded as an authority in pomology in Germany even at the present day. We do not agree with all his views in regard to the value of pot culture; for amateurs, however, they will have a peculiar interest. It is curious to observe that even in his day the multiplicity of names was a sore vexation; it has now got to be an intolerable nuisance. But to the first extract:

"In trifles, as well as in important matters, it is almost ever chance which leads

us to new discoveries. I should have missed many an hour of serene pleasure, if necessity had not driven me, in the fall of 1782, to plant a peach tree in a pot, because, on account of the frost, I could not plant it in the ground. I kept the pot in a room, where the earth did not freeze, and as early as the beginning of March the tree commenced to thrive, and blossomed quite unexpectedly. I bestowed the greatest care on it, gave it every chance to receive the sunshine, and throughout the whole summer it throve admirably. The tree retained two peaches, and in the fall they proved to be the real long sought-for Venusbreast (*Teton de Venus*).

"I had, indeed, seen trees in pots before that time in France, but these were always the *dwarf Reinette* (Reinette pomier nain), or the *dwarf Peach of Orleans*, and the *double-flowering Peach*. In Strasburg I saw also the dwarf Almond in pots. But all this made as little impression on me, as to deriving therefrom any conclusions for pomology, as my forcing of roses, or the many large orangeries which I only wondered at.

"Solely, then, this makeshift to preserve a tree, that I had long sought after, awoke the idea in me to try all kinds of fruit in pots. My fruit garden at that time was small, but the cultivation of the manifold kinds of fruit gave me, nevertheless, the greatest pleasure from my earliest youth. How I delight to the present time, in some trees which I grafted in my eleventh year! My love for the cultivation of fruit trees, was mainly created and sustained by the beautiful plantations of select varieties in the large gardens attached to the "German House," at Marburg. When yet a schoolboy I brought many a good thing home from there, and I had scarcely a tree which had not from four to six varieties in its crown.

"The idea of raising all kinds of fruit in pots, opened to me the grand prospect of being able to dedicate my leisure hours to pomology, and to try all and retain the best. So far I had wasted these moments of evening leisure on flowers, and how many of them yield us for fifty weeks of care, only two weeks of pleasure, which is often spoiled by bad weather! Now these splendidly blossoming fruit trees are my pot flowers, and throughout the summer hope is watching over them, that they may gladden me with ripe fruit in the fall. Indeed, many of my friends have already exchanged their flowers for fruit trees.

"This, however, would be only pleasure and enjoyment, without real profit. Indeed, many of my acquaintances did not seek for any thing else at first; but soon they sought for new varieties, and enquired into the genuineness of names. In this wise, knowledge and activity, a general love for nature, a greater attentiveness for her rich treasures, and many a profounder observation of vegetation were developed, which slumbered before unnoticed.

"The advantages to the study of pomology, of cultivating all kind of fruit trees in pots, are various and important. Most of my varieties I know only by this means. Not to mention, that the *amateur* can only by this method become by

degrees, and, as it were, playingly, an adept, the cultivation of fruit trees in pots is just as desirable, in fact, it is a real necessity for the *professional pomologist*, who is bent on studying the whole subject of pomology. By it only is he enabled to acquire in a few years a wealth of pomological knowledge in regard to genuineness of varieties, nomenclature, diversity of vegetation, and value of varieties, and so to become finally a competent judge in such matters. Orchards on a grand scale are by no means so efficient for this purpose, and the cost of them, both in money and time, is very large. And where is there an orchard that contains all varieties?"

(*To be continued.*)

THE STRAWBERRY.—IV.

BY A. S. FULLER, BROOKLYN, L. I.

The Strawberry is one of those plants that will grow in almost any kind of soil, but it flourishes best in a deep, rich sandy loam, one that is always moist, but never wet. To supply it with an abundance of moisture, and have that equalized, never too wet nor too dry, we know of no better or cheaper plan than to trench the soil two feet deep. If the soil is very tenacious, it should be underdrained previous to trenching, and sand, gravel, or very fibrous muck, or leaf-mold, when applied. When the soil is of a light sandy nature, it should receive from one to five hundred cart loads, according to circumstances, of old decomposed muck, leaf-mold, or something of a similar nature, and let this be thoroughly incorporated with the soil. When a piece of land has been prepared in this way, there need be no fear of the plants ever suffering from drouth, or for want of proper food to produce a good supply of fruit. Old, well rotted manure of almost any kind is not objectionable on very poor soils, but we much prefer leaf-mold or old sods, with a little ashes or plaster, in preference to barn-yard manures, for these latter have a tendency to make the plants over-luxuriant, and produce more vines than fruit.

Having prepared the soil for the reception of the plants, the next consideration (if for garden culture) is the arrangement of beds; and these should be four feet wide, planting three rows in each, placing the plants eighteen inches apart each way; this will leave six inches margin between the outside row and the walk, which should be two feet; this gives three feet between the plants of parallel beds. This is none too much space between beds for standing room to gather the fruit; and if different varieties are grown in beds side by side, a less space than three feet would increase the danger of the plants running from one bed to the other, and becoming mixed, which should be guarded against, if any thing like good culture is attempted.

When pistillate varieties are grown, they should be planted in alternate beds

with perfect sorts, but never plant both kinds together in the same bed, as no two varieties are of the same vigor, and consequently the stronger grower will overrun the weaker, and soon take possession; and generally the poorest variety is the most luxuriant grower.

Time of Planting.—There seems to be two seasons of the year in which the strawberry may be planted more successfully than any other, viz., Spring and Fall. When new beds are made in spring, they should not be made too early; wait until the ground has become settled and warmed by the spring rains. Very little fruit, if any, will be had from the plants the first season, so that there is no necessity of being in too great a hurry; only be sure of getting the plants out in time to be benefited by the warm spring rains.

From the first to the twentieth of September is the best time to make a plantation in the fall; and if planted at this time, and well taken care of, they will give a good crop of fruit the next season. Sometimes plantations are made in August, but as a general thing we do not think there is any thing gained in planting so early, as the plants are not so well rooted; and further, the hot, dry weather which we generally have at this time weakens, if it does not entirely destroy the plants.

Selection of Plants.—The first runners that are produced from the plants in the summer are undoubtedly the best, inasmuch as they are stronger and better rooted than those that are produced later in the season; further than this, we do not believe there is any difference in the plants on a runner, or in their productiveness or the quality of the fruit which they will produce in after years.

Preparation of the Plants.—When transplanted in the spring, half-dead leaves should be pulled off and the roots shortened about one-third of their length, as this induces them to throw out a new set of fibrous roots from the ends cut off, which they would not do if it was not done. No matter whether the plants have been a long time out of the ground or have been taken up but recently, the shortening of the roots is beneficial to plants that are set out in the spring. The roots have become ripened during the winter, and the ends are always broken off when taken up, and it is necessary that they should be cut off smooth and clean before planting again. Not so with plants in the fall; for if it be observed, the roots of the strawberry continue to elongate from the extreme end until cold weather sets in, and when carefully taken up before this time the ends are not broken, and if soon planted again they will immediately grow. To understand this more fully, it is only necessary to take up a few plants in August or September, and place them on the ground in a shady place, and give them a good sprinkling of water. After they have remained there forty-eight hours, examine the roots, and the new growth will be seen by their whitened appearance.

Planting.—Choose a wet or cloudy day for planting, if possible. Draw a line where you are to put the row of plants, keeping it a few inches above the ground, so that you may plant under the line; this is much better than to let the line lie

on the ground, for then it will be in the way of the transplanting trowel. Spread out the roots evenly and on every side; cover them as deeply as you can without covering the crown of the plants; press the soil down firmly around it with the hands. If the weather should prove dry, give them a good soaking with pure water (no mere sprinkling will do) as often as they require it, which will be as often as the foliage droops. Let no weeds grow among them, and stir the surface of the soil as often as possible; the oftener the better. We know that some cultivators assert that there is much injury done to the roots by frequent hoeing the plants, but we have never found the plants injured as much by hoeing or forking among them as they were by neglecting to do either.

[This last remark is a very proper one. The growth of weeds is a frequent cause of failure in Strawberry culture. If the hoeing is done when the weeds are small, (as it should be,) the roots will receive no damage; while the benefit to the plants will be almost incalculable. A weed over an inch high should never be seen in a strawberry bed.—Ed.]

PRUNING ROSES.

BY HAMMOCK PARK.

This operation will require to be performed during March, April, and the first two weeks of May, (but not later.) Commence with the more hardy varieties, such as the French, Moss, Provence, etc.; these, for the most part, have dormant-looking buds, and being less active than others, take a longer time for their development. Next begin with the hybrids, hybrid perpetual, hybrid Bourbon, and hybrid China; but as these are more excitable than the above, they should be pruned the latter end of March and beginning of April. The tender Noisettes, China, and tea-scented kinds should not be pruned till the latter end of April and beginning of May.

Before commencing to prune, it is necessary to observe the habit of the plant, whether it be a vigorous, or a moderate, or a dwarf variety; also, to determine, with those kinds suitable for exhibiting, whether they are required for that purpose, or merely for effect; if for the former, large blooms will be required, and less of them, and these can be obtained by close pruning; in the latter instance, longer pruning must be adopted, when a greater quantity of blooms will be obtained, but they will be inferior in quality, and less in size. Carefully thin out the heads of the plants, and take away the small crowded branches, and all gross, unripe shoots, leaving such only as are composed of firm and well-ripened wood, and leave these at regular and equal distances. Prune down according to the strength of the shoot and habit of the variety; in some cases, to two or three inches; in others, where the habit is vigorous, one foot, or even eighteen inches,

will not be too long for a shoot to be left; but as this depends upon the habit of the variety and shoot to be pruned, no absolute general rule can be given in shortening the shoots. Cut close to an eye, observing, when practicable, to leave well-swollen, plump buds, which will always produce the finest blooms; likewise secure those having an outward tendency, and pointing in a direction proper for the handsome formation of the plant. The French, Alba, and nearly all the Moss Roses, require rather close pruning; and if large blooms are required for exhibition, this particular must be strictly attended to. The hybrid Chinas and hybrid Bourbons are, with very few exceptions, very vigorous growers, and require more care in pruning than most other sorts. An acquaintance with the varieties is necessary to enable the operator to prune successfully; for instance, we have Fulgens and Brennus, two vigorous growing varieties, which frequently produce shoots five or six feet long in a season, either of which, if pruned as recommended for the French, or some other of like habits, would not produce a flower; whereas, with judicious pruning, every shoot would be made to give large trusses of blooms. The varieties in these two classes must therefore be carefully studied, as there are some among them which require close pruning, and these may be known by their moderate style of growth, when compared with the majority of the same classes. Young plants, just received from the nursery, will require to be pruned down to two or three eyes, a little more or less, according to the habit of the variety. Unless this is attended to, large and handsome heads are rarely obtained.

[A thoroughly practical article, which will be acceptable to many of our readers. We suggest that you continue the subject, classify the Roses, and give a select list of kinds. It is very important to understand the habits of some kinds, otherwise the wood that produces the flowers is cut away: this we have often seen done. But we leave the subject in your hands, with the hope that you will follow it up.—Ed.]

MORE ABOUT GRAPES.

BY DR. NORRIS, WILMINGTON, DEL.

Dear Mr. Editor,—I have been much pleased with the Grape discussion between the two doctors in the last numbers of the Horticulturist, and, at great risk to myself, step in between the combatants and proclaim they are both wrong.

Dr. Houghton was the aggressor, for he openly proclaimed that the native Grapes were unfit for table use. This was a bold assertion, doctor, and I am not surprised that the great disseminator of the Delawares should take exception to it. Now, if there is one point on which I feel competent to give an opinion, it is on the *quality* of the Grape. Nature has, I believe, endowed me with a particu-

larly nice organ of taste. Whether this be a blessing or a curse I leave others to determine; but I do most unhesitatingly pronounce that Delawares, Maxatawneys, and Rebeccas are *good*. If the Delawares were as large in berry as the Black Hamburgh, I should think that we might seek no farther. As it is, I am afraid that it will disappoint many. As to its undoubted hardiness, there can be no question; and it is decidedly one of the greatest acquisitions the native family ever received, despite Mr. Prince. A larger and a better native Grape is the amber-colored Maxatawney, as I tasted it this autumn at the Pennsylvania Horticultural Society, grown, probably, in some city yard. Whether it will be the Grape for general cultivation that the Delaware is, it is too early yet to say; although, judging from the extraordinary vigor and growth, both of my own vines as well as those of my neighbors, I think it safe to predict that it will rival, and may eclipse, the Delaware for general culture. I named Rebecca as being one of the highest flavored Grapes growing out of doors, although I am not disposed to give it the higher place accorded to either of the former. Well ripened Concord Grapes are not bad, nor are some Isabellas and Catawbas that I have eaten to be despised. Surely Dr. Houghton must be called to account.

Now we come to the other side. The advocates of the natives declare that the Exotic Grapes are only luxuries to be indulged in by the wealthy. Unfortunately, Mr. Editor, this is the too prevalent opinion, and could I hope by any feeble effort of mine to be able to eradicate it, I should feel that I had accomplished much. It will take years, I fear, to make it generally known that, with the exception of thinning, Black Hamburghs and the foreign vines generally, in a cold vinery, require no more care than that necessary to bring a crop of natives to a state of perfection. Let any one mention the subject of Grape growing under glass, and immediately the idea of mystery arises—visions of expensive houses costly heating apparatus, kid-gloved gardeners, mildew, thrip, red spiders, and I know not what, all rise up and completely bewilder and befog the name.

Now, Mr. Editor, I look upon it as part of your duty to disabuse the horticultural public of these ideas. Foreign Grapes can be as easily grown in cold vineries as the natives can be out of doors, with the exception of thinning the berries. Ventilation is a great bugbear with many. Mr. Saunders has given his experience that the ventilators need never be closed after the grapes have once set; and although I can not entirely agree with him, I was yet very glad to see the statement, as it helped to disprove this everlasting subject of ventilation. No two books agree on the subject, and scarcely two gardeners. Border-making is another perplexity; here are the extremists again. One puts forth the idea, all inside border; not a root to be allowed to get outside; and the next day you meet another exhibiting a nine-pound bunch from a vine with most all its roots outside of the house.

It is this wide difference in statements that precludes so many from erecting vineries; and when you tell the public that fine grapes are grown either with the

roots all inside or all outside, with the ventilators always open or without any ventilation, they scarcely know what to believe. The truth is, that while the vine is so free to bestow its luscious fruit on those that give it any attention, it is not yet known what amount of restraint and strange, unnatural devices will prevent its yield.

[Our readers already know what we think in regard to the goodness of native grapes. In this connection, we only feel called upon to endorse Dr. Norris's good taste. We have seen the Maxatawney several times, but never ripe. We esteem it a very promising grape, but have grave doubts whether it will ripen its fruit much north of Philadelphia; that, however, is a point which has yet to be determined. We have done something, and hope to do much more, to dispel the mists which surround this grape question. To grow grapes successfully in the open air and in a cold grapery requires about an equal degree of knowledge and skill, which, as we have said elsewhere, may be acquired by any person who will study the subject intelligently: without this knowledge and skill, the best results can not be obtained in either case. There are no peculiar difficulties surrounding the subject, however, which need deter any person from making the attempt. Mildew, thrip, red spider, etc., will be the companions, more or less, of all who grow grapes, whether under glass or in the open air; these and similar evils are incidental to all kinds of plant culture, and should no more deter us from growing the grape, than the apple, the pear, or a rose. It is right and proper that the novice should be told of these things, not, however, to frighten and discourage him, but to prepare him to battle with and subdue them. In regard to ventilation, borders, etc., there is a good deal of misapprehension, and there are also discrepancies which can be readily reconciled. We accept your suggestion, Doctor, and promise you an article on this subject. In the mean time, we say again to all who can afford it, Build a grapery.—Ed.]

PELARGONIUMS.

(*See Frontispiece.*)

We present, as a frontispiece this month, portraits of three new Pelargoniums, taken from *Turner's Florist*. They are of the spotted varieties, and present an outline that is nearly perfect. The colors are very fine. The Pelargonium has of late been too much overlooked, even by growers of specimen plants; and as a specimen or show plant there are few that surpass it. It is much to be regretted that old and deserved favorites should be neglected, even temporarily, for new comers, no matter what their merits. We know, however, that the old ones will at some time re-establish their claims to admiration, and reproach us for our neglect. Let us, therefore, while welcoming a new candidate for favor, not forget the old that we know and have learned to love.

THE IOWA STRAWBERRY AND ITS SEEDLING VARIETIES.

BY WM. R. PRINCE, FLUSHING, L. I.

It seems not to be realized that this is a *distinct species* of the *Fragaria family*. Torrey and Gray, and other botanists, have failed to elucidate the fact, that the mighty prairies of the West have presented us with two species entirely distinct from each other, and from all others known: the Iowensis and Illinoensis. At Cincinnati, they deem the Iowa (or Washington, as often called) one of the most important for field culture, as it supplies their markets with earliest berries in abundance. It is, like "Longworth's Prolific," an hermaphrodite plant; but while this supplies the market abundantly, we have Mr. Stom's statement, that he had never seen Longworth's Prolific there, much and absurdly as the latter has been puffed by others there for its productiveness and other merits.

The Iowa is readily distinguished by its large and luxuriant light green foliage, downy beneath and on the petioles, and by its strong peduncles of large, broad, rounded, light orange-scarlet berries; their color peculiar, beautiful; rather acid; inferior in flavor; the crop a fair one for its sex, and *under the disadvantage* that it has to be its own impregnator.

In hardihood none can surpass it, as in its native locality the mercury sinks to 30° below zero. As a hardy, vigorous parent, it may be looked to with great interest in regard to its progeny, and I have taken much pains in the seminal production of new varieties. The Austin's Shaker seedling originated from the Iowa, and is of very large size, similar to its parent in color, and, unfortunately, more acid, soft, and spongy, and consequently not suited for market. Chorlton's Prolific is also of the same parentage, not as large, but similar in color, acidity, and lack of flavor. Both of these seedlings are, like the parent, *hermaphrodite*. McAvoy's No. 1 is also an Iowa seedling, of less size than its parent, similar in color, rather more acid, with little flavor, but more productive, from its being pistillate. I have grown and tested some scores of seedlings, seeking to obtain pistillate varieties, of consequent greater productiveness, and berries that possessed both sweetness and flavor. I have succeeded in both respects; and as all the varieties from the Iowa parent are remarkable for their hardihood, great vigor, and redundant growth, they may be justly deemed the most important acquisitions, as regards reliable crops, throughout the northern sections of our country. I will now describe such of these seedlings as have been selected, and deemed worthy of being named. H. designates the hermaphrodite (called staminate) varieties, and P. the pistillate varieties.

Sirius, H., early, very large, obtuse cone, light orange-scarlet, fine flavor, the sweetest of the Iowa family; plant vigorous, very hardy, and very productive.

Seraphine, P., monstrous, obtuse cone, light bright scarlet, a splendid berry, white flesh, juicy, sprightly, pleasant flavor; plant extremely vigorous and hardy, very productive, highly estimable.

Sappho, H., very large, conical, light scarlet, beautiful, good flavor; plant very productive, quite valuable.

Diadem, P., very large, rounded, light scarlet, remarkably beautiful, pleasant flavor, suitable for all purposes; plant very vigorous and hardy, exceedingly productive. Produces more than Wilson's Albany, or any other hermaphrodite variety.

Globose Scarlet, P., very large, nearly round, frequently 1¼ inches in diameter, beautiful light orange-scarlet, mild flavor, rather soft; plant hardy, very vigorous, with large, broad foliage, very productive.

Triumvirate, H., large, obtuse cone, bright scarlet, good flavor, very productive.

Triumphant Scarlet, H., very large, conical, bright scarlet, splendid, juicy, fine sprightly flavor, ripening gradually for two or three weeks; plant very hardy, vigorous, exceedingly productive.

Suprema, P., large, obtuse cone, bright light scarlet, juicy, sprightly flavor; plant tall, vigorous, robust, very productive.

Supreme Staminate, H., monstrous, obtuse cone, bright deep scarlet, good flavor, a remarkable berry; plant very vigorous, robust, tall, broad foliage, fair crop.

Prince's Late Globose, P., very large, rounded, bright orange-scarlet, very showy, the berries in large clusters, firm, ripening eight to ten days after the main crop, valuable as a late market berry; plant very vigorous, hardy, exceedingly productive.

[The Iowa is undoubtedly a good stock to work with. What is needed is to cross it with some kind that will give its progeny firmness and flavor. Mr. Prince has sent us a lot of his seedlings for trial, and we shall take good care of them.—Ed.]

GRAPE-GRAFTING.

BY EL MEDICO.

By the last mail I received *The Gardeners' Monthly* for the present month, (November,) and while reading it yesterday I found the following on page 347, in the proceedings of the "Grape-Growers' Convention, at Lancaster, Pa."

"Mr. Miller grafts his vines above ground, by the usual mode of tongue-grafting, *after* the sap has flowed in the spring: *it can not be done successfully otherwise.*"

If I were disposed to be dogmatic I would say: "*El Medico* grafts his vines above ground by the usual mode of tongue-grafting, *before* the sap has flowed in the spring: *it can not be done successfully otherwise.*" Such would be his language were he to speak only from his personal experience. His egregious failure *after*

the flow of the sap, under seemingly the most favorable circumstances, will be found humbly confessed and compassionately printed in the January number of this year's HORTICULTURIST. Without denying that others have met with complete success in grafting the grape after the flow of the sap, I must say that my experience, though less extensive, is similar to that of Mr. George W. Campbell, of Delaware, Ohio, who has stated that, after several years' endeavors, he could only attain success by grafting *before* the sap has moved in spring.

With your permission, I will now tell of my "operations" of last spring, and describe their results. A little prolixity will be pardoned when it is remembered that an account of individual "cases" is always more interesting, as well as more instructive, than a simple generalization. The "subjects" of my experiments were a row of 15 Isabellas and another of 14 wild vines in my garden. They were an old, neglected, and "rough set of customers," which an Irishman might say had been "kicked and cuffed all over creation." At least every gardener who had wielded a hoe for my predecessor seems to have given them a whack. Huge, rough, gnarled, knotty things they were, apparently impregnable, both above and below ground. But thinking my cause a good one, I opened the campaign against these rebellious subjects, *as soon as the frost was out of the ground*, in the last days of February, protected by a thick overcoat, and armed with one of Jackson's best English handsaws. Limbs and roots were attacked, and amputated at the most assailable points, and attempts were made to split them. I had as well tried to "split a horn crossways." I was repulsed, and thought I was going to be defeated, when I luckily thought of my surgeon's saw, and put it to a good, if an unaccustomed use. With it I carefully sawed out a thin wedge of wood, which I used instead of a cleft; and where the stump was very large (and some were 4 or 5 inches in diameter) I sawed out a second wedge, at right angles with the first, thus making four places for the insertion of grafts. The sawed surfaces were carefully smoothed with a sharp knife, like a scalpel; and the grafts, with but one bud, were accurately fitted in. A bass bandage was then applied, not to compress the stumps, for they were irrepressible; but, I suppose, only in obedience to orders, in such cases. Soft earth was then put over the grafts, about as thick as bran is put upon a compound-fractured leg. Medical horticulturists will be specially pleased with this description. Now for a few individual cases.

No. 1. (of the Isabellas.) Feb. 25th, five grafts inserted. Delaware. Nov. 5th. All failed!

No. 2. Feb. 28, two grafts. Delaware. Both lived. Combined length of canes, 32½ feet, large and well ripened. Laterals, 13 feet. Total, 35½ feet.

No. 3. Feb. 26, two Delaware grafts. Both failed.

No. 4. March 12, six Delaware grafts. Three grew. Combined length of canes, 25 feet. Laterals, 12 feet. Total, 37 feet.

No. 5. Feb. 25, two Delaware grafts. Both failed.

No. 6. March 12, two do. One grew. Canes, 43 feet. Laterals, about 10 feet.

No. 7. Feb. 25, six Delaware grafts inserted around a hideous old stump, 4½ inches in diameter. One only grew. Within one inch of old bud five canes sprang out. Combined length, 47 feet. Laterals, 25 feet. Total, 72 feet.

No. 8. March 1, one Delaware graft. Grew. Cane, 4 feet.

No. 9. Feb. 28, six Delaware grafts. Four grew. Combined length of canes, 77½ feet. Laterals, 10 feet. Total, 87½ feet.

No. 10. Feb. 28, four Delaware grafts. One grew. Cane, 8 feet. Laterals, 2 feet. Total, 10 feet.

No. 11. March 1, five Delaware grafts. Three grew. Combined length of canes, 50 feet. Laterals, 5 feet. Total, 55 feet.

No. 12. Feb. 28, two Delaware grafts. Both failed.

No. 13. March 1, five Delaware grafts. One grew. Cane, 6 feet.

No. 14. Feb. 28, five Delaware grafts. Two grew. Canes, 36 feet. Laterals, 4 feet. Total, 40 feet.

No. 15. March 12, three Delaware grafts. One grew. Cane, 22 feet. Laterals, 6 feet. Total, 28 feet.

From the above it will be perceived that I put in 56 Delaware grafts, of which only 20 are now living; so that but little more than one-third succeeded. Fifteen old and worthless stocks were grafted, of which eleven are now converted into (with one exception) very strong and vigorous Delaware vines, for which I would not take $10 each, as hard as are the times. On the unsuccessful stocks I may try my hand again next spring. I am, as I think I ought to be, fully satisfied with my beautiful row of Delawares. For a single season's growth they are very large, healthy, and well matured, almost to the tips of the canes. The roots are so strong I shall prune them but very little, and allow them to bear all they will.

Now, something about some other varieties which I grafted on the row of wild vines—all males—with which some ungodly nurseryman cheated and disappointed for some fifteen years the former innocent proprietor of the garden.

Vine A. Four Union Village grafts. All failed.

" B. Five Coleman's White. 3 grew. Combined length of canes, 60 feet. Laterals, 5 feet. Wood well ripened.

Vine C. Eight grafts of supposed Rebecca, but now believed to be Chasselas. But one grew. The growth was remarkable for size and vigor. The main stem, with six large branches from near the ground, made a united growth of 64½ feet; small branches on laterals, not less than 20; making a total length of 84½ feet. The stem is seven-eighths of an inch in diameter near the ground. The wood is now so tender that I have no hopes of finding it alive next spring, although I mean to cover it well with earth.

Vine D. Three grafts of Union Village. All failed.

" E. One do. Taylor's Bullitt. Lived. Cane, 1 foot.

" F. Two do. do. One grew. Cane, 3 feet.

" G. Four Annas. All failed.

" H. Two grafts. Lenoir. Failed.

" I. Six Dianas. One grew. Cane, 10 feet. Laterals, 10 feet.

" J. Two De Candolles. Both grew. Canes, 36 feet. Laterals, 10 feet.

" K. Four Dianas. One grew. Cane, 8 feet. Laterals, 6 feet.

" L. Two Herbemonts. One grew. Cane, 12 feet. Laterals, which were untouched, 71 feet. Total, 83 feet.

Vine M. Two Dianas, on young root, 2 years old. One grew. Cane, 17 feet.

" N. One Anna. Failed.

" O. One Anna. do.

The Anna is the most refractory of all the Grapes I have attempted to manage. I can neither propagate it by grafting, nor in hot-beds, from single eyes.

A fraction more than a third of my Delaware grafts succeeded; and of the other varieties just a fourth. Yet I have some very fine vines among the latter and feel flattered with my success. Those vines which have failed can be tried again, and if need be, repeatedly, until they are converted into the best kinds. No one who has a wild or otherwise worthless vine in his garden should regard it as a cumberer of the ground. Simply as a stock to graft upon, it is worth several dollars to those who value time.

The question still remains unsettled as to the best time of grafting. Some can have no success unless they operate before the flow of the sap; others, and perhaps the majority, contend that the only proper time is after the sap has begun to move. There are rare cases of skillfulness in which success is as uniformly met with as in grafting the Apple. What is much to be desired is, that teachers of horticulture should throw such light upon the subject as would enable farmers generally to perform the operation.

A few remarks in this connection, but not directly on the subject. A curious fact observed by me was, that nearly every one of my grafts began to grow simultaneously with other vegetation. All put forth two or three leaves in due time, which induced me to think that I would not have a single failure. Some continued to grow, but the greater part stopped suddenly; some for days, some for weeks, and a few for as long a period as *three months*. These latter died, or rather seemed to die; but in June suddenly threw out several buds from around the old bud. These grew with great rapidity; and in the case of a Delaware and a De Candolle, ripened their wood. A Diana, under similar circumstances, failed to ripen the wood.

When they became set, they grew with such astonishing rapidity that they seemed almost transparent for a foot or two from their extremities. They were as tender and fragile as a young cucumber vine, and in several instances were broken off apparently by a sudden fall of rain or gust of wind. But their chief enemy, while in this tender state, was an unknown insect, whose method of attack was somewhat singular. The soft and tender cane was punctured entirely around, as if it had been carefully done with a small pin or needle. The end of the branch

would fall off, in most cases, within an hour after being punctured; but in a few cases, where the wood had acquired some consistence, the branch recovered, but never perfectly, an elevated ring remaining, which marked a weak spot, where the vine would snap off if an attempt were made to bend it. This vexatious and somewhat discouraging matter turned my attention to the science of "bug-ology,' and I sought diligently for information to clear up the mystery. But the limited resources at my command failed to enlighten me. I felt like consulting Dr. Asa Fitch, but knew nothing of his whereabouts. I went out on picket duty against my enemy very often; was willing to descend to the barbarity of bushwhacking, any thing to rid myself of them. But I never caught them off guard; indeed, am not sure that I ever saw a single individual. They must certainly have had masked batteries. And thus it is I do not know whether they belong to the order of big bugs or little bugs, or bugs of any kind. Some friends charged the damage upon cut-worms, and to *head* them I applied bands of raw cotton at the surface of the ground. But they must have been innocent, as I found twigs cut off or punctured twenty feet from the ground. Ants were next accused, and they were attempted to be dosed with "Lyon's Magnetic Powder." The evil continued. Another experimental preventive was a strong decoction of aloes, poured over the tender shoots. Another failure; and so with all. Can Mr. Mead tell me the name of this secret foe? My *suspicions* are very strong against the *Curculio;* for during these forays upon my vines, I found many of them upon the leaves, which they seemed to eat and subsist upon. They had a cunning trick of falling *dead* to the ground as soon as they saw me coming; but I surprised and captured enough to satisfy me that they were the true stock. As I have neither plums, nor apples, nor pears, nor cherries, for them to prey upon, may not necessity have driven them to the tender grape-shoots?

Another disconnected remark: A late meeting of the Cincinnati Horticultural Society condemned the Taylor's Bullitt Grape as "worthless." "Quality excellent" are the words used in regard to it in report of Committee of the late *Grape Grower's Convention*, at Lancaster, Pa.

Between such august doctors I will attempt no decision; but would say, that of all my many varieties there is none which can compare with it in beauty of foliage, and few, if any, excel it in vigor. These qualities, with its hardiness, adapt it, above all other vines, to ornamental purposes.

[We are greatly pleased to know that your perseverance has been rewarded by a considerable measure of success. Your article will be very interesting to every man who grows a vine. In regard to the time of grafting, whether just before or after the flow of the sap is a matter of less importance than the proper condition of the graft. We shall endeavor to explain this by-and-by. Your "bug" may be the Curculio, but we are inclined to think it is a small brown beetle, which you will do well to look after next season. With us the Taylor's Bullitt is a rampant grower. It has not yet fruited; the fruit that has been sent to us, how-

ever, has not been good. We suspect there are two plants out under this name. Do not let it be long before we hear from you again.—Ed.]

AMERICAN SHADE TREES.—NO. V.

BY C. N. BEMENT.

The associations with the beauty of trees about our country homes enter deeply into the very best elements of our own character; and we hope that what we have written may induce some of our readers to plant trees for the purpose of increasing the comfort and beauty of the quiet homes of their wives and children. There is nothing which so agreeably impresses us as the evident partiality for trees and flowers which marks the progress of improvement, clearly indicating the existence of good taste on the part of the inhabitants, while it manifests the general growth of refinement. The object of these communications is to awaken a deeper sense of the blessings by which they are surrounded, and lead them, or any of them, to resolve to preserve the old and plant new trees.

"It is not easy," says a writer, "to measure the influence which a few individuals in any town or neighborhood may exercise in disseminating a partiality for such adornments of the mansion and surrounding grounds. And of all the productions of the organic world, what so grand as trees? What so sweet as flowers? so beautiful as birds?" and may we not add, what country has Providence so bountifully supplied with all these as the Americas? The variety and magnificence of our autumnal scenery have extorted admiration, even when beheld by the jaundiced eyes of tourists, as ready to find fault where none exists, as to express the many which candor must not allow us to repudiate.

No element of beauty is so completely managed as trees; and our resources in that respect are surprisingly great. Situated in the middle of the temperate zone, we have all the best of deciduous trees of the temperate regions, together with the finest of the evergreens of a more northern climate. Each tree has its own color, or rather its own class of color—tints and shades which belong to it, and to it alone. Early autumn becomes gay with the vivid crimson of the Tupelo and the Sumach. A little later come out the rich orange and yellow of the Sugar Maple, with the gold and scarlet of the red-flowering Maple. The olive tints of the Ash, the warm browns of the Hickory, the buffs and yellows of the Birches, give place at last to the full scarlets, yellows, and browns of the Oaks, many of whose leaves remain adhering through the snows of winter. These and forty other trees, and twice as many shrubs, furnish an inexhaustible storehouse of colors, as they do of foliage. It would be endless to speak of the adjuncts of trees, the climbing shrubs, the Virginia Creeper, so remarkable for its richness of fading colors, the Ivy, the Bittersweet with its orange-colored flowers,

and the climbers which naturally attach themselves to our trees, and which may be trained upon them in cultivation. All these are studies, and their daily observation will add immeasurably to the pleasure of the contemplative man, who dwells in or traverses the country in autumn with the eye of the painter, and the feelings of a poet, or with those of a worshipper of the Author of these beauties.

There are many species of trees and shrubs found in our own woods and fields, far more beautiful than a large proportion of the exotic kinds, which are carefully and extensively cultivated for ornamental purposes. Indigenous shrubs have been employed to a limited extent for embellishment; but their merits are more appreciated as they become better known and better understood. Some of the most splendid kinds have been transplanted from the forest to pleasure grounds, lawns, etc., and are much admired and highly prized.

It is surprising how small is the number of trees necessary to produce a striking effect. Ten or twelve trees, fortunately or skillfully disposed on the sides or brow of a hill, are often sufficient to give an air of richness harmonizing perfectly with a highly cultivated country. The happy effect of three or four trees on an island, gives an agreeable relief to the eye. A single tree by a farmer's house protects it, and gives it a desirable air of seclusion and rest, as it must be the residence of contentment. One almost covets a house so pleasantly situated. While an unprotected, solitary house seems cheerless, and to shiver in the north wind, and we involuntarily wish for the inhabitants a more cheerful home. Why should not at least one tree be found near the dwelling of every man, even the poorest and the humblest?

The Beech.—Next in order to the Oak, the Beech claims attention; but in beauty and symmetry it stands almost without a rival. These trees, as single ones in park scenery, attain a magnificence of stature that is altogether striking. In distance it preserves the depth of the forest, and even on the spot, in contrast, it is frequently a choice accompaniment. In its autumnal hues, it is often beautiful. Sometimes it is dressed in modest brown, but generally in glowing orange, and in both dresses its harmony with the grove is pleasing. About the end of September, when the leaves begin to change, it makes a happy contrast with the oak, whose foliage is yet verdant. Its branches, though small, are numerous, and it forms a deep shade. The Beech is fertile in "mast" or nuts, from which the trees may be raised in abundance, provided it be collected in time, that is, so soon as it falls, and preserved till March in dry sand; but it will not generally be good after the first year. The seeds germinate freely, and attain a few inches in height by the first autumn; they may then, or what is better, late in March following, be removed to stand in nursery rows till fit for final transplanting.

The Beech forms a handsome, compact hedge: planted as the thorn, duly cut down, kept trimmed, and brought to regular figure, it makes a close fence, and

while young, retains its leaves during winter; which, though not green, yet afford some protection.

The American Plane Tree.—This tree, in New England, is generally known and called the Buttonwood. Sycamore is a name often given it; and it is sometimes call Plane tree. In England it is called the Occidental Plane, to distinguish it from the European, which is called the Oriental. Plane tree or Palatane is classical, but Buttonwood is the good English descriptive name which belongs to it. The Oriental Plane tree is celebrated in history, having had a place in all the public and private grounds of the Greeks and Romans, as well as of the Eastern nations. The American is not less remarkable for its size and grandeur. It is also remarkable for the rapidity of its growth, especially when standing near water in which situation it grows rapidly. It is one of the loftiest trees, and its lateral branches, being of great length, give it extraordinary breadth. It also runs up to an unusual height, compared with other trees, before it forms a head, so that its lower branches are sometimes elevated above the roofs of the houses of common height. Hence it would be a valuable tree for road sides, if it were healthy, as it would allow the largest vehicles to pass under its branches. Loudon mentions one of these trees, standing near a pond, that had in twenty years attained a height of eighty-six feet, and a head of the diameter of forty-eight feet. The Button wood has been cultivated in England more than two hundred years.

The Birch.—This family consists of graceful trees and shrubs, natives of colder regions of each hemisphere. No trees are more distinguished for their light and feathery foliage, and the graceful sweep of their limbs, than the Birches. From the delicate and slender Gray Birch, throwing its thin, delicate leaves, and often pensive spray, lightly on the air, to the broad-headed Black Birch, with its rich, glossy, and abundant foliage, weighing its pendulous branches almost to the ground, no family of trees affords such a pleasing variety of aspect.

The Black Birch is easily distinguished by the dark color of its bark. It is the most beautiful, and, for the useful qualities of its wood, the most valuable of its species.

The Yellow Birch, in its native forests, is a lofty tree, lifting its head into the sunshine among the Hemlocks, Rock Maples, and Ashes, with which it grows. It is distinguished by its yellowish bark, of a soft, silken texture, and silvery or pearly lustre. The Yellow Birch has not often been cultivated for ornament, but it has great beauty. In travelling, we sometimes see it on the edge of a wood, with its abundant soft, green, often drooping foliage, between masses of which is seen the gleam of the light bronze trunk, with its silver and pearly lustre, showing what might be its effect introduced in ornamental woods in our pleasure grounds, parks, etc.

The Red Birch is somewhat different in aspect and character from the other birches. It is usually found bending over a stream, with its roots always in the

water or growing in company with the Swamp Oak or Red Maple, in places which, during one half the year, are inundated. When erect and standing alone, it is a singularly graceful tree, with its upper limbs long and sweeping out like those of the Elm, and its trunk almost clothed with small branches. Usually, it is remarkable for throwing out many small branches above.

The White or *Paper Birch.*—This tree grows naturally on the banks of rivers, and in moist, deep soil, flourishing in almost any situation, but never attaining a very large size. It is a picturesque tree, the points of light from its white trunk producing a brilliant effect in the midst of its soft, but glittering foliage, hanging, as we often see it, over some mountain stream, or sweeping up with a graceful curve from the side of its steep trunk.

NEW METHOD OF RAISING MUSHROOMS.—The following new and simple method of growing Mushrooms we find described in the French correspondence of the *New York Times.* The French are noted for their ingenuity and the application of the principles of science to matters of daily life. How far this new method is superior to those now well known, we are unable to say; but it is simple, and we shall try it, and trust some of our readers will do so too. The method is described as follows:

"A method has been discovered and reported to the Academy of Sciences for producing mushrooms artificially in any locality. Dr. Labourette, the discoverer, first develops mushrooms by placing spores on a glass on which he has spread sand and water. He selects the most vigorous ones, and it is with the mycelium of these that he obtains the magnificent specimens of mushrooms he exhibited to the Academy. He disposes his ground in the following manner: Some damp earth, composed of vegetable matter from a swamp, and placed in a cellar, is covered with a layer ten inches thick of sand and river gravel, and this, in turn, by another, composed of plaster derived from the demolition of houses, six inches thick. He sprinkles this earth-bed with water containing two grammes [thirty-one troy grains nearly] of azotate of potash to the square yard, after having first sown thereon the mycelium. The specimens shown at the Academy had grown in six days, and the discoverer asserts that the action of the azotate of potash lasts six years."

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, packages by Express, &c., should be directed to the Editors and Proprietors, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

OUR NEXT VOLUME.—We wish to remind our readers that our new volume, the seventeenth, will commence with the new year, and that it is our intention to make it the best ever issued. All that appertains to the orchard and garden, rural improvements, and kindred subjects, will be found fully and practically treated in the pages of the Horticulturist. The January number will be issued early in December. We shall print a large extra edition for distribution, and wish that each of our subscribers would interest himself in making up a club, our terms for which are so favorable as to make this the cheapest publication of its kind known. For six dollars we will send four copies; and to any one who will procure six new subscribers, and send us nine dollars, we will send a seventh copy gratis. The same discount to clubs will be made on the edition with colored plates, which we commend to all. Our full club rates may be seen on the cover. The bound volumes for 1860 and 1861, which we offer at premium rates to new subscribers, are among the most valuable of the whole set, and make a good beginning for preservation in libraries, to which they will make an elegant and valuable addition.

OUR DAY'S RIDE.—We have been unable to continue this for want of room. We have yet to finish Fishkill and Newburgh; and then take the reader a pleasant trip over the Raritan and Delaware Bay Railroad down to Tom's River, where Cranberries grow wild and Oysters are sold at fifty cents a bushel.

GOOD FOR JANESVILLE.—Mr. J. C. Sloan, of Janesville, Wis., sends us a club of 20 subscribers for 1862, which he says he obtained by very little effort, and expects to add hereafter many additional names. One hardly knows what he can do until he tries, and the success Mr. Sloan has met with should stimulate each and all of our subscribers to do as well. Our lowest club price makes it the cheapest magazine of its kind and size in the country, and as we intend the volume for 1862 shall rival all others in its excellence, we commend it as a valuable investment. Janesville is situated on Rock River, seventy miles west of Mil-

waukee, and on the borders of one of the most fertile and beautiful of prairies. It is surrounded by a fine country, and settled by an enterprising and intelligent class of people. It has a fine water power well improved, is a railroad centre, and ranks high among the leading inland cities of the West. It is now a city of upwards of 10,000 inhabitants, and in society, educational advantages, commercial intercourse, and business spirit and activity, will compare favorably with any similar sized eastern town.

A Big Beet.—Preston Hodges, Esq., of Stamford, has sent us a Mangold Wurtzel weighing upward of twenty-five pounds. It is almost large enough for a meal for an elephant.

Exhibition of the American Institute. — Not having had a public fair this year, the Institute has determined to hold an exhibition at its rooms in the second week of February next. It will be confined to improvements in Agriculture, Manufactures, and the Arts, for which the gold and silver medals of the Institute will be awarded. We hope the enterprise will be liberally supported. Circulars may be had on application to the Institute.

Correspondence.

P. B. Mead, Esq.—*Dear Sir,*—I take the liberty to send you, pre-paid by Express, a few bunches of grapes, grown upon a vine found a few years since in the garden of the late Dr. Spofford of this place, where the To Kalon originated. Will you be so kind as to inform me what variety it is, and whether you consider it worthy of dissemination. Good judges here pronounce it superior to Diana. The vine is perfectly hardy, and the fruit ripens ten days before Isabella.

Lansingburgh, N. Y., Oct. 22d, 1861. A Subscriber.

[The above was duly received, for which please accept our thanks. In answer to our subscriber's queries, we remark, that the grape is entirely new to us, being distinct from any now in cultivation, but resembling somewhat a seedling we received from another quarter. We desire to compare the two more closely. We have no hesitation in saying that it is worthy of dissemination. The bunch and berry are above medium size, and of the best quality. The color is not very attractive, being of a dull claret or red; the color, however, constitutes one of its distinctive features. We have a drawing in preparation, with which we shall give a description. This and Mr. Merceron's grape we can cheerfully endorse.—Ed.]

Mr. Peter B. Mead:—*Sir:* In your remarks on my note of correction, about the name of Camellia Cochlidea, you make some statements, which require a few words in reply.

You state it was proper to call Mr. Humphrey's plants, the "original stock."

If Mr. Becar had never raised any but the seedling plant, and Mr. Humphrey procured it from him, then he might claim having the "original stock;" but as Mr. Becar raised several, and they being distributed among different parties, Mr. Humphrey's has no more right to be called the "original stock" than any of the others.

The only "legitimate" authority to name a seedling is the raiser thereof. And the plant of my friend the amateur, coming from the collection of Mr. Becar, being duly purchased, (know nothing of the stolen plant, hearing of it from you for the first time,) and declared by the seller to be the *only* plant in existence; the amateur therefore being possessed, as he thought, of the *true* "original stock," unbaptized, was certainly then the duly accredited namer. I fail to see why Cochlidea is not as legitimate as Spiralis rubra, which you name it, after it has been known to the public for at least three years as Cochlidea.

I need only reiterate my former statement, that as Cochlidea, it is pretty well known in the vicinity of New York. It is to be found as such at Mr. Buchanan's and Mr. Bridgeman's, and probably some more of the florists, and in several of our first class collections. But we need not wonder at your not being fully posted on this matter, when we know that the two best private collections of Camellias in New York, both containing the disputed plant, have never yet been honored by an inspection from the Editor of the Horticulturist.

Until you show us why the name ought to be changed to Spiralis rubra, I don't see why we should not stick to its equally "legitimate" and older one of

COCHLIDEA. UNDE.

[It seems to us that Unde has pre-determined not to understand what we said, and it is always a difficult matter to convince a man against his will. Yet, with singular inconsistency, he admits precisely what we claim, viz., that Mr. Humphrey's plant having come from Mr. Becar's collection, it is proper to call it original stock; so, also, it is proper to call Unde's friend's plant original stock. Unde must understand as well as we do, that by original stock is not meant the original plant. In regard to naming a plant, the legitimate authority to do so resides originally in the person who raised it; he can exercise that authority himself, or request others to do it for him; and that is precisely what was done in this case. There is a recognized and acknowledged rule, too, that the person who first publicly describes a plant has a right to name it. Unde's friend may have thought he purchased the only plant in existence, but we *know* that he did not. Mr. Becar never parted with all the plants of any of his selected seedlings; he had plants of them all to the day of his death. We say we *know* it, because it is a matter entirely within our personal knowledge. If Unde's friend had had the only plant in existence, no one would question his right to name it; and we wish to be distinctly understood as having no controversy with him on this point. As to the plant having "been known to the public for at least three years as Cochlidea," we have only to say, that Unde's public and our public are bodies of vastly different

magnitude: there is simply a difference of opinion here. Unde reiterates, "that as Cochlidea it is pretty well known in the vicinity of New York," and that "it is to be found as such at Mr. Buchanan's and Mr. Bridgeman's, and probably some more of the florists," which is not quite so immoderate as his first statement. But in this connection we have only to repeat the denial in our last. Thinking it strange that we had not seen it, except as noted last month, we applied personally to our principal Camellia growers, and they assured us it was not among their plants. Being at Mr. Bridgeman's several days after the receipt of Unde's present article, we asked Mr. Bridgeman again if it was in his collection, and he told us it was not, and his word is as good as gold. We could give additional force to this point if we chose. Unde adds, not as politely, however, as he might, that we have never inspected the two best private collections in New York. There may be some difference of opinion as to which are the two best private collections in New York, but we should esteem it a personal favor if Unde would tell us which two he refers to. In one of them he probably refers to Mr. Stewart's. If so, he is mistaken; for we saw his fine collection of plants long before we saw those under Unde's care. In conclusion, if Unde is not already conviuced that Spiralis rubra is properly named, we fear we can say nothing that will convince him. If we admit the claim of Unde, we do not see how we can deny that of others who have had it for several years under the name of the Screw, which we discarded as mildly as we could, because of our previous knowledge of the plant. Under the circumstances, we really can not perceive why all the parties should not show their good nature and good sense by letting the matter remain where we have placed it.—Ed.]

Brooklyn Horticultural Society—Conversational Meeting.—We continue the proceedings of the Conversational Meeting from our last. They are somewhat lengthy, but their interest will fully repay perusal. We find, on looking at our account last month, that the questions are not arranged precisely as they were asked, but the difference is of no great moment. The following is a continuation of Dr. Grant's lecture:

In our discussion of the first question, perhaps the fourth also, incidentally, by its intimate relation to the first, has been sufficiently considered to need no further examination. It is as follows: "Can the native grape be profitably grown for wine-making?"

But the question directs our attention to a field very extensive, and too interesting to suffer us to pass it by without a word of special notice. We shall see that the answer to this will be yea or nay, according to the management of the vineyard. As the native vine (Catawba, for instance) is grown by one man, we shall find it not merely profitable, but largely remunerative. If we state his annual net profit at five hundred dollars per acre of Catawba vineyard for a succession of years, taking the seasons good and bad, (to him, by-the-way, they have never been very bad,) we shall only state what we know has in numerous instances actually taken place. Within sight of these productive vineyards are others upon land as good, and as favorably situated, but badly managed, whose profits have been measured by a minus quantity. In this the vineyard does not differ from any other business which requires manly care. It may be said of the vine, however, with more exactness of truth than of any other subject of culture, that as is its management, so is its return to the husbandman.

The vine is not a being of accident, but, like humanity itself, a creature of circumstances; and if these are favorable, the produce is excellent and abundant. And it is in the vintner's power, as it is his province, with extremely rare exceptions, to *make* the circumstances favorable. The vine that is trained up in health to full development, and is still continued under good management, has very great power to withstand the trying changes of the seasons, and ability to bring at least a large portion of its crop to maturity in those the most unfavorable. Its care and management are not intricate and difficult, nor are the operations of the vineyard matters of speculation or doubtful propriety, or of uncertain result. They are such as patient, well-informed industry, that feels it a privilege and high honor to co-work with the Almighty Father, will find much pleasure in giving at the right time and season, but such as impatient indolence fails of bestowing at the right time and season, and so comes short of the reward.

In one of the most noted vine regions of this country, there is a committee of distinguished vineyardists appointed to visit the vineyards from time to time during the season, to note their management and condition, and at the end of the season to report the results of their observations. The chairman of that committee, to illustrate his own views of the importance of good management and care, said in my hearing, that if the particulars of the treatment of a vineyard were given to him, he could from the account alone give the result almost as well as by personal inspection: so intimately are management and success connected.

Now the management of the vine must not be regarded as difficult in any one of its operations, but, like the good man's life, it is a *patient continuance in well-doing throughout;* and under these conditions, which are well ascertained, and easily intelligible to any one who, unbiased by preconceived theories, is willing to observe, under the clear light of long-established facts, we may say, without fear of contradiction, that the vineyard affords a more remunerative pecuniary return than can by any other branch of culture be drawn from the bosom of our blessed mother earth.

There are other and even more important considerations rising up and clustering around this one of profit, which must form the base, but upon which we can not now dwell, that have in all ages constituted the calling of the vineyardist the most dignified and elevating of all industrial pursuits, and a good vineyard as the most desirable of possessions.

I have instanced Catawba vineyards, because I desired to give not evidence merely, but actual demonstration by history, of a long succession of years. Some most instructive cases of rise from poverty to wealth and high consideration by means of Catawba vineyards I could relate if time would permit.

The Catawba for wine-making is suited to only a limited range of climate; and although good in quality, it is far from being best; and those very persons who, by the thorough management of their Catawba vineyards, have furnished largely our means of demonstration, have also, by their careful observations and experiments during a series of years, demonstrated the surpassing value of our new varieties, which are perfectly suited to a very wide range of climate. The question must receive an emphatic affirmative answer.

Question 3*d*.—What is the comparative value of the native and foreign grape as objects of culture for profit?

This question fitly leads, for even a most cursory view of it will lay open to our sight the great importance of the subject commercially since the advent of the new varieties of grapes, which are working a revolution, not the least in importance of those which characterize our age.

If I rightly apprehend the import of the question, a comparison is intended between the culture of foreign varieties under glass for table use, and the cultivation of our native kinds in the open air.

Without violence, the subject may be so enlarged as to make comparison of the prospective value of the investment for the production of foreign grapes for the table, and of the native grapes for the table and for wine. But, restricted to the cultivation of grapes for the table, the parallel may be more easily drawn, and the main points of the case more clearly set forth to our immediate observation. We shall be able to place the conditions and circumstances of both by the side of each other for strict comparison, so that if we treat the subject fairly, we need not fear to fail of arriving at a just conclusion.

To avoid unnecessary complication, we shall consider the foreign grapes to be grown without artificial heat.

If this question had been under consideration ten years ago, the case would have presented a widely different aspect from the present. Our best natives then had too little resemblance to the foreign kinds to permit them to be brought into general comparison, but now we have kinds which, if they blush at all, can only blush with pride at the high rank which they are

able to hold by the side of the best of any country, and particularly for wine. For it was for this purpose that we had almost banished the hope of getting any thing of eminent excellence, and so long had we earnestly looked in vain, that we had begun to call that wine which does not deserve the name.

But to our immediate subject. We can not bring the subject before our sight clearly without the use of some figures, but will avoid their use as far as can be done safely. And we may remark at the beginning, that there is so much that is attractive and deeply interesting pertaining to the vinery, that it is not a little difficult to make a rigid calculation of the cost that shall enable us to know its economical value.

To those who have the taste and ability to enjoy the vinery as a luxury for cultivation and diversion, as well as for its magnificent productions, it has a real value not to be estimated in dollars and dimes, and consequently can not be placed to account of its commercial value, which we are now seeking to learn.

A house one hundred feet long and twenty-one feet wide will afford accommodation for one hundred and twenty vines. These, under the best of care, may be expected to produce about fifteen pounds each. Much more than this weight is often obtained in a particular season, but not in a succession of seasons.

An average of the actual product will fall below this, but the best management may fairly hope for this amount. I have named twice as many vines as are generally given to a house of this size, for without this number and by the ordinary method of training, I do not believe more than two-thirds of the crop named can be obtained during a succession of ten years.

This structure alone, if built as cheaply as possible, consistent with full efficiency and due regard to durability, may be made for six hundred dollars, apparatus for watering not included.

[The doctor's figures are too low here. A substantial, *durable* house, one hundred by twenty-one feet, can not be built for this sum. A very cheap house is always in the end a very dear one, the cost of keeping it in repair being out of all proportion to its estimated value.—Ed.]

To occupy this ground fully with Delaware vines to the best advantage in exact system they should be planted in four rows, which would contain in all one hundred and forty-eight vines, as follows: The first to stand one foot in advance of the fence, containing fifty vines two feet apart, trained in full Thomery plan; the second, eight feet from the first, containing forty vines two and a half feet apart, in three-fourths Thomery plan; the third, six feet from the last, containing twenty-five vines, in half Thomery plan; and the fourth four feet from the third, containing thirty-three vines, according to the most approved vineyard plan, containing thirty-three vines. The height of the trellises will be about nine feet for the first, seven for the second, five for the third, and three for the shoots upon the arms of the fourth.

The first may be expected to produce seven hundred pounds, or fourteen pounds per vine; the second five hundred pounds, or twelve and a half pounds to the vine; the third four hundred pounds, making sixteen pounds to the vine; and the fourth two hundred pounds, being about six pounds to the vine, making eighteen hundred pounds in all, which is truly a large amount, but still a very low estimate, and considerably within a safe calculation.

We have supposed the cost of border to be the same in each case, and so we shall continue it in our calculation; but, in fact, our border for the natives would cost twenty-five per cent. less than the border for the vinery. For the natives the fence and trellis would be required for training and protection, which the vinery would furnish in itself. This would be less expensive than the watering apparatus, including cistern and tanks; but to avoid, as far as possible, estimates in figures, which are difficult to keep in mind, we will balance each with the other.

In our calculation injustice has probably been done to the natives in the estimate of the crop. As the result of ten years' careful observation, I must avow the belief that the open border, with the proper attention, will produce, for ten consecutive years, as great a weight of perfect fruit as the vinery. But we will proceed as we have begun, in the proportion of one third less; and we will also concede the same proportion in the value of the fruit.

For the foreign grapes, 1,800 pounds at 35 cents per pound, the sum would be $630; or, in round numbers, $600. For 1,200 pounds of the natives, at 20 cents per pound, the amount would be $240. This gross sum, compared with the $600 from the vinery, is unquestionably small. But we shall soon see that the cost is also small, and that not merely the relative profit, but the absolute profit from the border, is as great as that from the vinery.

At the end of the third year the cost of the vinery will not be over-estimated at $1,000; even $1,200 may probably be too little. As a large part of this is perishable and in need of frequent expensive appairs, such as painting, etc., less than 20 per cent. will not equal the value of the same at lawful interest. This will amount to $200, and the cost for attendance can not be much less. We shall not have more than $200 net after all expenditures are deducted.

On the other hand, our border, at the same time, will not stand us in more than $350, and the cost for attendance will not exceed $25; so that for the vine in the open air the annual expenditure, including interest, will scarcely exceed fifty dollars; thus leaving nearly, or quite, $200 net profit for our twentieth part of an acre under high culture.

As we have, throughout the comparison, been very liberal to the vinery and rigorous with the border, we will still do so, and allow $65 for expenditure, which still leaves all that we dare take as net earnings of the border.

It must be remarked in passing, that no one who has compared the fruit of the Delaware with other kinds, native or foreign, and enjoyed its excellence, will be able to conceive of its bringing less in market than the best Black Hamburghs. Objection is made to its size, but not by those who are conversant with the elegance of its translucent berries and fine, compact bunches, whose beauty needs not the unseemly marring to which the Hamburghs must be subjected before presentation to be enjoyed. The same objection has been made to the Seckel Pear, and yet its surpassing merit still commands the highest price.

The comparison between the cultivation of grapes under glass and in open air, has been made upon the same extent of ground for a three-fold purpose, which will soon appear in the examination of the other questions.

Let us now see what the cost of the vinery will do invested in one acre of vineyard. It is just the amount that, under favorable circumstances, will bring to productiveness at the end of the third year one acre of Delaware vineyard, purchase of vines and all expenditure, except cost of ground, included.

If good vines have been chosen, and every operation has been well performed, at the end of the third season the vines will be carrying an average of four pounds each of perfect bunches of grapes, or four tuns to the acre. This is about one-third the quantity that Delaware vines are generally suffered to bear at this age, and is much below what may be borne with safety.

We need go no farther with this calculation. Beheld at a distance, it makes the profit of the vinery in the foreground appear quite diminutive, when we consider that the attendance of the vineyard of one acre will cost less than that of the vinery of one hundred feet, and that the crops are produced with a certainty to which the vinery can put forth no claim.

If the price of the grapes is estimated at a low value for wine—ten cents per pound—the amount will be eight hundred dollars. But until the lovers of good fruit are supplied who have no vines of their own, good Delaware grapes will not be sold at a price that will net less than twenty cents per pound, nor within a few years at a price so low as that. This will give sixteen hundred dollars, less expenses, which will all be less than two hundred dollars.

I think we may safely arrive at the conclusion, that, with such varieties as we now have, the cultivation of the native hardy grapes offers much better profits than the cold vinery. And it may further be announced, without fear of contradiction by any one who has taken care to be well informed on the subject, that grape culture is not only inaugurated in this country, but is far advanced in the sure way of progress that shall make it here, has it has ever been in *all* the vine growing countries, "*The grand culture.*" All branches of culture are deeply interesting to the man of contemplation and feeling, but in different degrees; and the vine not only includes the interest of all except that of the Florist, but excells them all in its reflex action in cultivating the mind, the sentiments, and the heart.

The vine alone could be fitly chosen to illustrate the vital union of Deity with humanity and the husbandman of the vine justly feels the high recognition of the excellence of his calling by the most tender comparison ever expressed in language being drawn from his own relation to the vine.

Question 6th.—Is not some good system of training indispensable to the continued productiveness and longevity of the vine?

This question suggests a very wide field of speculation, upon which we will not step this evening. A very few remarks will be sufficient to set forth clearly our affirmative position, and by the kindness of Mr. Bridgeman we have at hand just the vine which is desirable to illustrate this part of our subject. This vine, although now in a pot, is in all respects as a vine should be in garden or vineyard when well grown preparatory to training according to any judicious plan. I am not about to advocate any particular plan, for there are many whose merits are well known and universally recognized for accomplishing both the general and specific ends of training. The general object aimed at in training is the production of good wood, which shall produce large crops with certainty, and continue the vine in perpetual health. Without the aid of man it wastes its strength in apparently sportive efforts, and not only fails to produce good fruit within prescribed limits, but also fails to maintain its own health. The vine before us consists of one shoot, which is the present season's growth. It is about six feet high, of strong, well-ripened wood. Its leaves are large, thick, and fleshy, with a firm leathery feel which denotes the healthy development, which is the result of good management and care.

At the junction of each leaf with the main shoot is a bud lying in the embrace of the foot-stalk of the leaf, and what appears to be the short stump of a shoot, on which may be seen two or three leaves. These leaves, as we shall soon see, are not unimportant. These stumps would have been each shoots of considerable length if they had not been "stopped;" that is, had their ends pinched off in their early growth. They are called laterals, and this pinching is one of the operations called summer pruning.

If these had been suffered to grow, instead of one tall, stout shoot, beautifully furnished with its strong healthy leaves, we should have had many slender shoots and a multitude of small, thin, unhealthy leaves, whose strength would not have been sufficient to enable them to resist uninjured the trials to which they are always subjected by atmospheric changes during the period of growth. Instead of one strong youth, now ready to take a short winter sleep, and wake in spring to perform joyfully the labors of early manhood, we should have a great number of feeble infants, that might have the misfortune to survive the winter, but only to linger through a short and profitless existence. These little stumps of the laterals are not now joined to the main shoot by a strong woody union, but only by inosculation, little more firmly than the leaves, and will fall off in spring if not removed. If suffered to acquire strength, they form a strong woody union, and become branches, and damage or destroy the bud at their base. At the base of every well-developed leaf at its first formation are two buds, one of which very soon shoots forth, and becomes the lateral of which we have spoken. These are called the anticipative buds. By the side of these are now to be seen the other buds, which are called dormant buds, and which will make the shoots of next season. When well developed, as on the specimen before us, they are often called fruit buds, because the shoots which spring from them will put forth flowers, and, under proper circumstances, produce fruit. Of these strong buds you will see there are some 25 or 30, each of which will produce a shoot, and each shoot will attempt to produce three bunches of grapes—that is, from 60 to 90 bunches. If we attempt to keep all, we shall not succeed, and shall probably fail of getting one good bunch. We shall get a great number of shoots in the form of side branches, which will vary in length from three to twice three feet, all of which will be covered with innumerable small leaves, none of which will be strong and healthy, and, consequently, none prepared to give any *good* fruit the next season. Here, then, we shall have a worthless vine which will require as much room as an orchard tree, and occupying as much space as four productive vines.

Now let us subject our vine to training, and behold the result. We will cut it off at the fifth bud from the bottom, and in the spring, when these five buds shoot forth, we will rub off the two lower ones, and for a time suffer the other three to grow. Flowers for three bunches of grapes will appear on each. Just before these open, stop each of the lower shoots at the second leaf above the upper bunch, and tie the third one to the stake to grow to a tall shoot, as was done the season before. Take off the upper bunch from each shoot, and six will be left, which will give six bunches of mature fruit. Laterals are to be stopped as before. We have followed the vine only through two seasons of its early age, but I think all who have favored us with their attention must have seen clearly that the vine can not give good results without systematic training, which supposes a course of pruning also. By this we aim to produce just so much good wood as we have learned, by experience and careful observation, will best occupy a given space, in which we propose to train each vine, and to effect its equal distribution over the allotted area, so that not only each branch or shoot shall occupy uncrowded its proper space, but each bunch and leaf also. As the vine advances in age the indispensable need of these operations becomes more clearly obvious.

By any good system which is founded upon accurate knowledge of the vine, its management is easily accomplished, and without it no vines, in garden, house, or vineyard, have ever produced good results for any length of time. If any lady wishes to be her own superintendent, she may be assured, that by taking the vines from the first planting, she will find the matter so simple and pleasant that the charge of vines enough to produce one ton of grapes yearly will be found to be a most interesting diversion rather than a burdensome care.

And we may safely say to all who desire to grow good grapes, that after proper entertainment is furnished to the roots of our best hardy kinds, the only specific required to enable them to meet uninjured all the ills to which vines are supposed to be incident, is a good system of raining faithfully carried out.